

PATENT APPLICATION
ATTORNEY DOCKET NO. 33692.03.2269
CS22690RL

Claims

What is claimed is:

1. A wireless portable device comprising:
 - a plurality of antennas operative to receive signals from a plurality of positioning satellites and wherein at least two of the plurality of antennas have different beam angles with respect to each other;
 - a beam selection structure operatively coupled to the plurality of antennas; and
 - a control circuit, operatively coupled to the beam selection structure, and operative to control switching between each of the plurality of antennas based on a number of positioning satellites detected through each of the antennas.
2. The wireless portable device of claim 1 including a satellite network position signal processing circuit operative to receive device positioning signals received by the plurality of antennas, determine a number of positioning satellites that are detected by a selected antenna and output information corresponding to a number of detected satellites.
3. The wireless portable device of claim 1 wherein the beam selection circuit is operative to change a beam angle of the portable device with respect to a nominal device position.

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4. The wireless portable device of claim 2 wherein the satellite network position signal processing circuit further includes at least one of signal strength measurement circuitry and signal quality measurement circuitry.

5. The wireless portable device of claim 1 wherein the control circuit controls the beam selection structure to acquire device positioning signals from the positioning satellites using the antenna that is determined to receive positioning signals from a higher a number of positioning satellites.

6. A wireless portable device comprising:

- a flip position detector operatively coupled to detect whether the wireless portable device is in an open or closed position;
- a plurality of antennas operative to receive device positioning signals from a plurality of positioning satellites and wherein at least two of the plurality of antennas have different beam angles with respect to each other;
- a beam selection structure operatively coupled to the plurality of antennas and to the flip position detector;
- a satellite network position signal processing circuit operatively coupled to receive device positioning signals received by the plurality of antennas, determine a number of positioning satellites that are detected by a selected antenna and output information corresponding to a number of detected satellites; and
- a control circuit, operatively coupled to the antenna beam selection structure, and operative to control switching between each of the plurality of antennas based on

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the number of positioning satellites detected by the satellite network positioning signal processing circuit.

7. The wireless portable device of claim 6 comprising wireless telephone circuitry that is operatively coupled to the plurality of antennas through the beam selection structure.

8. The wireless portable device of claim 6 wherein at least one of the plurality of antennas is located in a movable flip portion of the wireless portable device and wherein the beam selection structure is operative to select the antenna in the movable flip portion as a primary antenna when the wireless portable device is determined to be in an open position.

9. The wireless portable device of claim 7 wherein the beam selection circuit is operative to change a beam angle of the portable device with respect to a nominal device position.

10. The wireless portable device of claim 7 wherein the satellite network position signal processing circuit further includes at least one of signal strength measurement circuitry and signal quality measurement circuitry.

11. The wireless portable device of claim 10 wherein the control circuit controls the beam selection structure to acquire device positioning signals from the

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positioning satellites using the antenna that is determined to receive device positioning signals from a higher a number of positioning satellites.

12. A method of acquiring satellite positioning information for a portable device comprising:

determining a number of positioning satellites detected using a first antenna of a plurality of antennas that have different beam angles;

switching to a second antenna having a different beam angle from the first antenna;

determining a number of positioning satellites detected using the second antenna; and

acquiring device positioning signals from the positioning satellites using the antenna that is determined to receive device positioning signals from a higher number of positioning satellites.

13. The method of claim 12 including storing a detected number of satellites in memory and comparing the stored number of detected satellites to a threshold number of satellites that are desired to be detected.

14. The method of claim 12 including selecting the antenna in a movable flip portion of the wireless portable device as a primary antenna when wireless portable device is determined to be in an open position.

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15. The method of claim 12 including determining which antenna is to be used to acquire device positioning signals based also on at least one of a signal strength and a signal quality of received satellite positioning signals.

16. A method of acquiring satellite positioning information for a portable device comprising:

detecting a device position location request;

determining a number of positioning satellites detected using a first antenna of a plurality of antennas that have different beam angles;

storing information corresponding to the number of satellites detected using the first antenna;

switching to a second antenna having a different beam angle from the first antenna;

determining a number of satellites detected using a first antenna of a plurality of antennas that have different beam angles;

storing information corresponding to the number of satellites detected using the second antenna; and

acquiring device positioning signals from the positioning satellites using the antenna that is determined to receive positioning signals from a higher number of positioning satellites.

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17. The method of claim 16 including storing a detected number of satellites in memory and comparing the stored number of detected satellites to a threshold number of satellites that are desired to be detected.

18. The method of claim 17 including selecting the antenna in the movable flip portion as a primary antenna when wireless portable device is determined to be in an open position.

19. The method of claim 16 including determining which antenna is to be used to acquire device position location information based also on at least one of a signal strength and a signal quality of received satellite position signals.

20. A wireless portable device comprising:

- a plurality of built-in antennas operative to receive signals from a plurality of positioning satellites and wherein at least two of the plurality of built in antennas have different beam angles with respect to each other;
- a beam selection structure operatively coupled to the plurality of antennas;
- a satellite network positioning signal processing circuit, operatively coupled to the beam selection structure to selectively receive information from the plurality of built in antennas; and
- a control circuit, operatively coupled to the beam selection structure, and operative to control switching between each of the plurality of built in antennas based on at least one of: measure signal strength information, measured signal quality and

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number of positioning satellites detected by the satellite network positioning signal processing circuit.

21. The wireless portable device of claim 20 wherein at least one of the plurality of built in antennas is located in a movable flip portion of the wireless portable device and wherein the beam selection structure is operative to select the built in antenna in the movable flip portion as a primary antenna when the wireless portable device is determined to be in an open position.